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ABSTRACT

As part of its academic testing program and the evaluation of academic achievement, the Des Moines (Iowa) Public School System administers two standardized, norm-referenced achievement tests. These are the Iowa Tests of Basic Skills (ITBS) and the Iowa Tests of Educational Development (ITED). This document provides information regarding achievement on these tests in the 1994-1995 school year. The primary use of norm-referenced standardized tests is to provide general information about how the district compares with other urban districts with similar characteristics across the state and the nation. The ITBS is a test battery administered to students in grades 3, 4, 6, and 7 each year in February. The ITED is given each February to a sample of Des Moines students in grade 10. Results from both these assessments indicate that the district is achieving above most other schools nationally. While there is room for improvement, most schools are scoring at a higher percentile rank on the ITBS when compared to results from the ITBS given to similar groups in prior years. Overall, well above half of the students taking the ITED scored at or above grade level. For both tests, gender differences were minimal, but there were substantial differences between minority and nonminority students. Seven appendixes present details about test results, and a supplement contains a discussion of the norming process and norm use. (Contains eight tables, six appendix tables, and seven supplement tables.) (SLD)

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ITBS & ITED ASSESSMENT RESULTS 1994-1995

Des Moines Independent Community School District
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The Des Moines Independent Community School District
Standardized Test Results
June, 1995

The Des Moines Public Schools continue to focus improvement efforts on the academic growth and development of our diverse urban student body. The primary goal of the academic testing program is to provide information that the district and individual schools can use to develop and implement strategies to improve teaching and increase learning. As part of the academic testing program, the district administers two standardized, norm-referenced achievement tests. These are the Iowa Tests of Basic Skills (ITBS) and the Iowa Tests of Educational Development (ITED).

The purpose of this document is to provide information regarding student achievement on the district's standardized, norm-referenced assessment program for the 1994-95 school year. It is important to keep in mind that the district's standardized testing program is only a part of the district's academic assessment of students. Other aspects of the district-wide assessment program include criterion-referenced, objectives-based tests (subject matter tests) and the district's composition assessment. Also reported in the comprehensive report, issued in the fall, are results of college entrance examinations (ACT, SAT) and advanced placement tests.

The primary use of norm-referenced, standardized assessments is to provide general information regarding how our district as a whole compares with other urban districts with similar characteristics across the state and nation. The Des Moines Public Schools use national school norms as the standard of comparison for ITBS and ITED, since the district's urban demographic characteristics are more reflective of a national standard than a composite state standard.

With our current mobile society, it is important that a district not be so focused on its own curriculum objectives that it loses sight of what is being taught in other districts across the country. Standardized assessments help to prevent this tunnel vision from developing by selecting items that test a broad range of objectives from each subject area. These standardized tests are not intended or designed to perfectly match any district's curriculum. Keeping in mind that the ITBS is an assessment of *basic* skills, it is a fair measure of student achievement in most areas. The ITED assesses a broad range of basic *and* higher order skills.

The ITBS and ITED are timed tests. This means that a specific amount of time is given to complete the items in a given section. As such, timed tests may penalize students who take their time and answer only a small number of items correctly. For this reason, the ITBS may not be a perfect match for evaluating the performance of students in schools where the philosophy is to teach students to take one's time and do a good job.

The Iowa Tests of Basic Skills (ITBS)

The Iowa Tests of Basic Skills is a norm-referenced, standardized test battery developed by the Iowa Testing Programs in Iowa City, Iowa. It is administered in February to district students in Grades 3, 4, 6, and 7. Scores are reported in percentiles, grade equivalents, and normal curve equivalents. Individual building results can be found in Appendix B and Appendix C.

The 1994 school year was the first assessment using a revised form of the ITBS. The entire battery includes tests in the areas of reading comprehension, language, mathematics, social science, science, and sources of information (maps and diagrams; reference materials). This revision includes social science and science as part of the complete battery. In earlier forms, they were supplemental tests and were not administered due to poor content matching with the district curriculum objectives.

For the 1995 administration, district students took the reading, language, and mathematics subtests. These subtests comprise the Core Total score. Similar to the old composite score, the Core Total does not include Social Studies, Science, or Sources of Information. The Sources of Information subtests, not administered in 1994, have been reviewed and judged to be appropriate and were administered. Social Studies was administered to third grade students who had completed the course by the February testing date.

The ITBS tests are designed so that each successive level of the test contains items from the upper half (approximately) of the previous level material. Considering the basic design of the ITBS (or any norm-referenced test), students performing at the 50th percentile are at the expected test and grade level average. For example, fourth grade students scoring at the 50th percentile in February also have a grade equivalent of approximately 4.5.

On tests administered at the same time of year on subsequent years, a student scoring at the 50th percentile in both years has experienced a year's growth. A student scoring at the 50th percentile in 6th grade and at the 60th percentile in 7th grade might be said to have experienced accelerated achievement growth, over and above that which might be normally expected during that period of time.

Elementary School ITBS

Grade 3. Given a third grade student mobility rate ranging from 1 percent to 32 percent in the district's elementary schools and a socioeconomic variable ranging in one school where less than 5 percent of the students received free or reduced meals to greater than 90 percent in another, students recorded above average achievement. For this group of students, the district's national Core Total score on the ITBS was the 63rd percentile.

Of the district's 39 elementary centers, 25 (64%) scored at or above the 50th percentile. Seven of these elementary centers scored at or above the 80th percentile, and twelve others equaled or surpassed the 60th percentile point. Fourteen (36%) of the elementary centers scored below the 50th percentile, with eight sites scoring below the 40th percentile.

Grade 4. Given a fourth grade student mobility rate ranging from 3 percent to 32 percent in the district's elementary schools and a socioeconomic variable ranging in one school where less than 10 percent of the students received free or reduced meals to greater than 90 percent in another, students recorded above average achievement. For this group of students, the district's national Core Total score on the ITBS was the 63rd percentile.

Of the district's 39 elementary centers, 26 (67%) scored above the 50th percentile. Nine of these elementary centers scored at or above the 80th percentile, and ten others surpassed the 60th percentile point. Thirteen (33%) of the elementary centers scored below the 50th percentile, all scoring below the 40th percentile.

Elementary School Cohort Growth

Grade 3 (1993-94) to Grade 4 (1994-95). For the similar group of students, tested in the third grade in 1994 and in the fourth grade in 1995, the district's national composite score on the ITBS remained stable at the 63rd percentile. It should be noted that the group of fourth grade students in 1994-95 are different from the group of third grade students in 1993-94 to the extent that students move into or out of the district.

Of the district's 39 elementary centers, 20 (51%) recorded an increase in composite scores varying from 1 to 19 percentile points. Seven of these elementary centers improved by at least 10 percentile points, and eight others improved by at least 5 percentile points. Three elementary centers' scores remained unchanged, with two of these sites scoring above the 50th percentile. Scores at fifteen elementary centers (38%) dropped between 1 and 15 percentile points (Appendix D).

An analysis of the ITBS subtests for the 1994-95 fourth graders compared to their 1993-94 third grade scores (Table 1) indicates improvement on Reading Total and Language Total scores, but a drop in Math Total scores. The largest increase was in Capitalization (13 percentile ranks), and the largest decrease was in Math Concepts (16 percentile ranks).

Table 1. Elementary School ITBS Subtest Score Comparisons:
Cohort Trend Percentile Ranks
National School Norms

	Grade 3 1993-94	Grade 4 1994-95
Vocabulary	51	43
Reading Comprehension	54	63
Reading Total	52	55
Spelling	43	52
Capitalization	62	75
Punctuation	65	71
Usage	66	62
Language Total	62	67
Math Concepts	73	57
Math Problem Solving	62	73
Math Total	69	66
Core Total	63	63
Maps & Diagrams	NA	71
Reference Materials	NA	59
Sources of Information Total	NA	66
Social Studies	NA	63

Middle School ITBS

Grade 6. Given a sixth grade student mobility rate ranging from 8 percent to 23 percent in the district's middle schools and a socioeconomic variable ranging in one school where less than 30 percent of the students received free or reduced meals to nearly 60 percent in another, students recorded slightly above average achievement. For this group of students, the district's national Core Total score on the ITBS was the 53rd percentile.

Of the district's 10 middle schools, 6 (60%) scored at or above the 50th percentile. Three schools surpassed the 60th percentile point. Four (40%) of the middle schools scored below the 50th percentile, with three sites scoring below the 40th percentile.

Grade 7. Given a seventh grade student mobility rate ranging from 5 percent to 21 percent in the district's middle schools and a socioeconomic variable ranging in one school where slightly more than 20 percent of the students received free or reduced meals to nearly 60 percent in another, students recorded above average achievement. For this group of students, the district's national Core Total score on the ITBS was the 62nd percentile.

Of the district's 10 middle schools, 7 (70%) scored at or above the 50th percentile. Six schools surpassed the 60th percentile point. Three (30%) of the middle schools scored below the 50th percentile, with one site scoring below the 40th percentile.

Middle School Cohort Growth

Grade 6 (1993-94) to Grade 7 (1994-95). For the similar group of students, tested in the sixth grade in 1994 and in the seventh grade in 1995, the district's national composite score on the ITBS increased from the 61st to the 62nd percentile.

Of the district's 10 middle schools, 5 (50%) recorded an increase in composite scores varying from 1 to 9 percentile points. Two of these middle schools improved by at least 8 percentile points. One middle school's score remained unchanged, well above the 50th percentile. Scores at four (40%) middle schools dropped between 1 (three sites) and 7 percentile points (Appendix E).

An analysis of the ITBS subtests for the 1994-95 seventh graders compared to their 1993-94 sixth grade scores (Table 2) indicates improvement on Language Total scores, but a drop in Reading Total and Math Total scores. The largest increase was in Spelling (8 percentile ranks), and the largest decrease was in Math Concepts (9 percentile ranks).

Table 2. Middle School ITBS Subtest Score Comparisons:
Cohort Trend Percentile Ranks
National School Norms

	Grade 6 1993-94	Grade 7 1994-95
Vocabulary	49	46
Reading Comprehension	57	55
Reading Total	54	50
Spelling	54	62
Capitalization	63	68
Punctuation	59	65
Usage	56	57
Language Total	59	64
Math Concepts	68	59
Math Problem Solving	64	64
Math Total	66	62
Core Total	61	62
Maps & Diagrams	NA	68
Reference Materials	NA	55
Sources of Information Total	NA	63

Disaggregated ITBS Scores

Disaggregated ITBS data compares minority and non-minority Core Total scores (Table 3 and Table 4) by using median percentile scores. Of primary importance is to examine if the achievement *gap* between minority and non-minority students is closing and not widening. Trend data (Table 3) show that the gap (difference) for third graders in 1993-94 has closed for fourth graders (1994-95). Historical data (Table 4) show that the gap is closing at Grades 3, 4, and 6. However, the gap begins to widen again, however slightly, at Grade 7.

Table 3. Disaggregated ITBS Core Total Scores for Minority
and Non-Minority Students Using Median Percentile Scores
National Student Norms
Trend Results

Grade Level	Minority	Difference	Non-Minority
Grade 3 1993-94	34	(28)	62
Grade 4 1994-95	39	(19)	58
Net Change	+5		-4
Grade 6 1993-94	36	(23)	59
Grade 7 1994-95	36	(24)	60
Net Change	0		+1

Table 4. Disaggregated ITBS Core Total Scores for Minority and Non-Minority Students Using Median Percentile Scores
National Student Norms
Historical Results

Grade Level	Minority	Difference	Non-Minority
Grade 3 1993-94	34	(28)	62
Grade 3 1994-95	35	(25)	60
Grade 4 1993-94	42	(21)	63
Grade 4 1994-95	39	(19)	58
Grade 6 1993-94	36	(23)	59
Grade 6 1994-95	36	(19)	55
Grade 7 1993-94	40	(21)	61
Grade 7 1994-95	36	(24)	60

Another way to evaluate disaggregated assessment information is to examine the percent of students in a particular grade scoring at or above a specified standard. With the ITBS, differences between disaggregated groups regarding the number or percent of students scoring at or above grade level can be examined. Tables 5 and 6 show the percent of students scoring on grade level (50th percentile) or higher on the ITBS (Core Total). Overall, more than half of the students scored at or above grade level on the ITBS. Gender differences in achievement are minimal. There are substantial differences between non-minority and minority students, and between students receiving subsidized meals and those not receiving subsidized meals. Appendices F and G show the percent of students scoring at or above grade level, by building.

Table 5. Percent of Students Scoring On Grade Level
(50th Percentile) or Higher
Core Total Scores
National Student Norms
Trend Results

Grade	All Students	Males	Females	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Grade 3 1993-94	55.4	52.4	58.5	61.2	34.1	38.0	67.8
Grade 4 1994-95	55.3	53.4	57.3	60.4	36.7	37.9	68.0
Grade 6 1993-94	55.0	52.0	57.8	59.9	36.3	39.3	63.6
Grade 7 1994-95	56.0	52.2	59.4	61.5	36.0	39.7	65.2

Table 6. Percent of Students Scoring On Grade Level
(50th Percentile) or Highe-
Core Total Scores
National Student Norms
Historical Results

Grade	All Students	Males	Females	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Grade 3 1993-94	55.4	52.4	58.5	61.2	34.1	38.0	67.8
Grade 3 1994-95	55.0	54.0	55.9	59.9	35.0	36.8	68.0
Grade 4 1993-94	57.7	56.8	58.7	62.1	40.1	42.3	67.8
Grade 4 1994-95	55.3	53.4	57.3	60.4	36.7	37.9	68.0
Grade 6 1993-94	55.0	52.0	57.8	59.9	36.3	39.3	63.6
Grade 6 1994-95	51.0	49.8	52.2	56.4	28.9	32.6	62.2
Grade 7 1993-94	57.4	55.2	59.9	61.7	37.7	38.1	66.5
Grade 7 1994-95	56.0	52.2	59.4	61.5	36.0	39.7	65.2

The Iowa Tests of Educational Development (ITED)

The Iowa Tests of Educational Development is a norm-referenced, standardized test battery developed by the Iowa Testing Programs in Iowa City, Iowa. It is administered in February to a sample of district students in Grade 10. Scores are reported in percentiles.

The 1994 school year was the first assessment using a revised form of the ITED. The entire battery includes tests in the areas of vocabulary, content area reading, correctness and appropriateness of expression, quantitative thinking, interpretation of literary materials, analysis of social studies materials, analysis of science materials, and use of sources of information. Scores of 372 district 10th grade students who took the ITED in 1995 are shown in Table 7, along with scores from the 1994 assessment.

Table 7. ITED Mean Percentile Scores by Subtest
National School Norms

Subtest	Average Percentile Score	
	1993-94	1994-95
Vocabulary	77	77
Content area Reading	78	83
Reading Total	75	80
Expression	75	81
Quantitative Thinking	85	88
Core Total	80	87
Literary Materials	71	73
Social Studies	82	83
Science	82	89
Sources of Information	81	80
Composite	84	86

Tables 8 shows the percent of students scoring on grade level (50th percentile) or higher on the February 1995 administration of the ITED for each subtest. Overall, well above half of the students scored at or above grade level on the ITBS. Gender differences in achievement are small. There are substantial differences between non-minority and minority students, and between students receiving subsidized meals and those not receiving subsidized meals.

These data should be interpreted with caution. Any sampling method is subject to error with regard to representativeness of the sample. To the extent that minority representation in the sample (19.5% in the 1995 assessment) does not reflect the district's tenth grade minority student population (approximately 23%), the gap between minority and non-minority students may be in err. This also applies to the gap between students based on participation in subsidized meal programs (18.5% in the 1995 assessment; approximately 25% district-wide for Grade 10).

Table 8. February 1995 ITED: Percent of Grade 10 Students Scoring On Grade Level (50th Percentile) or Higher National Student Norms

Strand	All Students	Males	Females	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Vocabulary	64.2	66.9	61.5	69.4	40.9	45.2	68.1
Content area Reading	69.2	63.9	74.4	74.5	45.0	53.6	72.3
Reading Total	66.6	64.5	68.7	71.3	45.0	48.2	70.3
Expression	71.8	64.6	78.9	74.8	57.8	51.7	75.7
Quantitative Thinking	77.6	79.8	75.4	81.4	59.7	64.9	80.0
Core Total	73.9	70.6	77.2	78.8	51.7	50.9	78.4
Literary Materials	66.5	62.1	70.9	70.2	49.2	57.4	68.3
Social Studies	71.1	70.5	71.7	74.5	55.0	49.1	75.4
Science	74.4	73.0	75.7	79.6	49.2	56.7	78.0
Sources of Information	68.6	70.6	66.7	73.7	46.2	49.1	72.4
Composite	71.5	69.0	74.1	76.4	50.0	51.9	75.4

Voluntary Saturday ITED

In order to provide an opportunity for students who wished to take the entire ITED battery, a special session is held on a Saturday during the year. On November 9, 1991, fourteen students took the ITED at Lincoln High School. Interested students included five from the 9th grade, four from the 10th grade, and five from the 11th grade. On February 13, 1993, at 1800 Grand, five students took the ITED. On February 12, 1994, at 1800 Grand, three students took the ITED. On February 11, 1995, at 1800 Grand, five students took the ITED. Although the number of students taking advantage of this opportunity is small, it is anticipated that we will continue offering it to those who wish to take the ITED.

Conclusions

Based on the results of the ITBS/ITED assessments, the district is achieving above most other schools nationally. While there is room for improvement, most of our schools are scoring at a higher percentile rank on the ITBS tests when compared to the results of the ITBS given to similar groups in prior years.

As district stakeholders continue to dialogue about the factors that influence test scores, and what to do about them, the achievement gaps among disaggregated groups will certainly come to mind. The task then becomes one of how we are addressing the specific needs of our diverse student population. Another challenge, somewhat reflected in standardized test scores, is to be able to balance instruction in order to cover all areas of the district's curriculum for a particular grade. In order to develop a more systemic focus on improvement, it is also important for schools to be able to network more effectively, to be able to communicate about what works and what doesn't.

In isolation, these standardized test results only present one view of the achievement of our students. As schools receive these results, and evaluate them along with results from the district's writing assessment, criterion-referenced assessments, and their own teacher-made instruments, they will be able to paint a more accurate picture of student achievement. The information that they gather will contribute to their ability to plan for improving the teaching-for-learning process.

DEFINITIONS

Grade Equivalent - the grade level for which a score is the real or estimated average. For example, 4.2 represents the fourth year, second month.

Iowa Tests of Basic Skills (ITBS) - a norm-referenced test published by the Iowa Testing Programs in Iowa City, Iowa. It is administered in Grades 3, 4, 6, and 7 in the Des Moines Public Schools. The test consists of the following parts:

> Grades 3, 4, 6, & 7: Vocabulary, reading spelling, capitalization, punctuation, usage, visual material, references, math concepts, math problems, and math computation.

ITBS scores are reported in percentiles, grade equivalents, and normal curve equivalents.

Iowa Tests of Educational Development (ITED) - a norm-referenced test published by the Iowa Testing Programs in Iowa City, Iowa. It is administered in Grade 10 in the Des Moines Public Schools. The test consists of the following parts:

> Correctness of Expression, Quantitative Expression, Social Studies, Natural Sciences, Literary Materials, Vocabulary, and Sources of Information.

ITED scores are reported in percentiles.

School Norms - Show where a school building or school system average for each grade group ranks among other averages of similar grade groups. It indicates specifically where the average score ranks among the averages of other schools (Iowa Testing Programs).

Student Norms - Show where the average student ranks among other students in the same grade. It should be interpreted as the rank of the average student among the students (Iowa Testing Programs).

Normal Curve Equivalent - an interval scale equivalent of the bell-shaped curve. The conversion process to arrive at an NCE distribution transforms the shape of the bell-shaped curve into a rectangular shape, such that the scores are distributed equally across each point in the distribution.

Norm-Referenced Test - a test that interprets individual performance by comparing a student's score to a previously established norm group, not to a performance criterion. The test is designed for one-half of the students to be above the 50th percentile and one-half below.

Percent - the proportion of a total. In testing, it is the number of questions answered correctly divided by the total number of items on the test.

Percentile - a point in the distribution below which a certain percent of the scores fall. For example, the 80th percentile is the point below which 80 percent of the scores lie. The shape of the distribution of percentiles is a bell-shaped curve.

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Significance - an association between two variables or among a group of variables is said to be statistically significant when (in terms of quantitative measurement theory and practice) the association fulfills specific predetermined criteria. While statistical significance is largely a function of sample size, it must be weighed against a "meaningfulness" criterion. In the absence of statistical significance, results judged as having educational or practical meaning may play an important role in the evaluation of outcomes, and in some cases, may be more valid than statistical significance.

Note on Mobility Rate and Free/Reduced price meals:
Data on student mobility and qualification for free or reduced price meals (used for analysis of ITBS data) were taken from the student data files at Mid-Iowa Computer Center as of Friday, January 29, 1993 (the Friday before testing began). Since this information is available for each student, these indices were computed for each grade level within each building.

Mobility rate for each grade within each building was determined by the following formula:

$$\frac{\text{(Number of entries + Number of exits)}}{\text{Average daily membership}} \times 100$$

Average daily membership was computed by taking the official student enrollment "as of" the official count date (the third Friday in September), adding all of the entries after the official count date, and subtracting all of the exits after the official count date. Number of entries and exits were counted after the official count date.

Percent of students on free or reduced price meals was determined by combining the number of students on free and on reduced, and dividing by the average daily membership for that grade.

Appendix B

ITBS Historical Results
Grade 3 & Grade 4 Percentile Ranks
National School Norms

SCHOOL	Grade 3 1993-94 Core Total	Grade 3 1994-95 Core Total	Grade 4 1993-94 Core Total	Grade 4 1994-95 Core Total
Adams	67	47	49	52
Brooks	16	14	42	16
Cattell	68	57	57	57
Douglas	64	67	74	69
Edmunds	28	49	30	35
Findley	70	54	83	74
Garton	40	49	51	35
Granger	76	76	71	67
Greenwood	97	94	96	97
Hanawalt	97	97	97	99
Hillis	74	84	84	74
Howe	38	75	74	56
Hubbell	84	79	83	94
Jackson	64	50	77	75
Jefferson	93	97	97	94
Longfellow	14	21	31	24
Lovejoy	66	63	55	71
Lucas	18	10	20	23
Madison	46	62	71	39
Mann	NA	41	57	54
Mc Kee	42	19	43	35
Mc Kinley	12	20	24	25
Mitchell	52	41	63	54
Monroe	95	83	86	83
Moore	85	71	85	83
Moulton	15	26	44	20
Oak Park	48	58	49	36
Park Avenue	63	59	51	67
Perkins	66	74	74	65
Phillips	68	76	49	80
Pleasant Hill	83	85	82	77
Stowe	52	50	59	59
Studebaker	68	66	71	59
Wallace	25	18	43	18
Watrous	44	92	70	34
Willard	42	19	40	29
Windsor	77	66	91	84
Woodlawn	63	70	76	82
Wright	60	42	66	68
DISTRICT	63	63	68	63

Appendix C

ITBS Historical Results
Grade 6 & Grade 7 Percentile Ranks
National School Norms

SCHOOL	Grade 6 1993-94 Core Total	Grade 6 1994-95 Core Total	Grade 7 1993-94 Core Total	Grade 7 1994-95 Core Total
Brody	68	66	70	68
Callanan	80	79	77	79
Goodrell	50	53	47	52
Harding	36	26	40	44
Hiatt	46	27	37	39
Hoyt	40	34	53	44
Mc Combs	54	51	62	63
Meredith	61	56	73	60
Merrill	77	74	81	78
Weeks	70	47	74	69
DISTRICT	61	53	64	62

Appendix D

ITBS Percentile Rank Trends
Grade 3 (1993-94) To Grade 4 (1994-95)
National School Norms

SCHOOL	Grade 3 1993-94 Core Total	Grade 3 1993-94 % Mobility Group*	Grade 3 1993-94 % Fr/Red Group*	Grade 4 1994-95 Core Total	Grade 4 1994-95 % Mobility Group*	Grade 4 1994-95 % Fr/Red Group*	1993-94 to 1994-95 Core Total Change
Adams	67	1	3	52	1	3	-15
Brooks	16	2	7	16	1	6	0
Cattell	68	1	5	57	1	4	-11
Douglas	64	1	3	69	0	3	+5
Edmunds	28	0	5	35	1	5	+7
Findley	70	1	7	74	0	6	+4
Garton	40	3	6	35	1	5	-5
Granger	76	0	4	67	1	4	-9
Greenwood	97	0	1	97	0	2	0
Hanawalt	97	0	1	99	0	1	+2
Hillis	74	0	3	74	0	3	0
Howe	38	0	4	56	0	3	+18
Hubbell	84	1	2	94	0	2	+10
Jackson	64	0	4	75	1	4	+11
Jefferson	93	0	1	94	0	0	+1
Longfellow	14	3	9	24	2	8	+10
Lovejoy	66	2	4	71	2	5	+5
Lucas	18	1	8	23	1	7	+5
Madison	46	1	4	39	1	5	-7
Mann	NA	1	5	54	0	3	NA
Mc Kee	42	0	4	35	1	4	-7
Mc Kinley	12	1	7	25	1	6	+13
Mitchell	52	1	3	54	0	4	+2
Monroe	95	1	3	83	1	3	-12
Moore	85	1	3	83	0	4	-2
Moulton	15	4	9	20	2	9	+5
Oak Park	48	1	5	36	0	5	-12
Park Avenue	63	1	4	67	0	4	+4
Perkins	66	1	5	65	1	4	-1
Phillips	68	1	3	80	0	4	+12
Pleasant Hill	83	1	1	77	1	2	-6
Stowe	52	1	7	59	3	7	+7
Studebaker	68	1	2	59	0	2	-9
Wallace	25	1	6	18	2	7	-7
Watrous	44	2	3	34	2	3	-10
Willard	42	1	5	29	3	5	-13
Windsor	77	1	2	84	0	3	+7
Woodlawn	63	0	2	82	1	2	+19
Wright	60	1	3	68	1	3	+8
DISTRICT	63	14.08	45.31	63	13.06	44.81	0

*Group numbers represent ranges of student percentages (i.e., 0 is less than or equal to 9.99%, 1 is 10% to 19.99, etc., 9 is greater than 90%).

Appendix E

ITBS Percentile Rank Trends
Grade 6 (1993-94) To Grade 7 (1994-95)
National School Norms

SCHOOL	Grade 6 1993-94 Core Total	Grade 6 1993-94 % Mobility Group*	Grade 6 1993-94 % Fr/Red Group*	Grade 7 1994-95 Core Total	Grade 7 1994-95 % Mobility Group*	Grade 7 1994-95 % Fr/Red Group*	1993-94 to 1994-95 Core Total Change
Brody	68	0	2	68	0	2	0
Callanan	80	0	3	79	1	3	-1
Goodrell	50	1	4	52	1	4	+2
Harding	36	1	5	44	2	5	+8
Hiatt	46	1	6	39	2	5	-7
Hoyt	40	1	4	44	1	4	+4
McCombs	54	1	3	63	0	3	+9
Meredith	61	0	3	60	0	3	-1
Merrill	77	0	3	78	1	2	+1
Weeks	70	1	4	69	1	4	-1
DISTRICT	61	11.98	41.28	62	13.24	39.30	+1

*Group numbers represent ranges of student percentages (i.e., 0 is less than or equal to 9.99%, 1 is 10% to 19.99, etc., 9 is greater than 90%).

Appendix F

Percent of Students Scoring on Grade Level (50th Percentile) or Higher
Grade 3 (1993-94) to Grade 4 (1994-95) ITBS Elementary School Trends

School	Grade 3 1993-94 Percent ≥ Grade Level	Grade 3 1993-94 Number Complete	Grade 3 1993-94 Number Enrolled	Grade 3 1993-94 Percent Complete	Grade 4 1994-95 Percent ≥ Grade Level	Grade 4 1994-95 Number Complete	Grade 4 1994-95 Number Enrolled	Grade 4 1994-95 Percent Complete
Adams	60.4	48	51	94.1%	52.0	50	54	92.6%
Brooks	20.5	44	57	77.2%	13.3	45	61	73.8%
Cattell	64.0	50	68	73.5%	50.9	55	64	85.9%
Douglas	60.3	68	73	93.2%	54.7	64	69	92.8%
Edmunds	29.7	64	72	88.9%	37.7	53	66	80.3%
Findley	63.6	55	63	87.3%	69.8	43	62	69.4%
Garton	43.9	41	48	85.4%	38.5	39	44	88.6%
Granger	73.1	52	66	78.8%	63.8	58	67	86.6%
Greenwood	82.4	74	82	90.2%	79.7	79	83	95.2%
Hanawalt	87.0	46	58	79.3%	93.3	45	57	78.9%
Hillis	65.2	66	75	88.0%	66.7	63	75	84.0%
Howe	42.4	59	62	95.2%	53.4	58	59	98.3%
Hubbell	63.9	61	63	96.8%	79.4	63	66	95.5%
Jackson	67.2	58	71	81.7%	66.7	60	67	89.6%
Jefferson	78.2	78	79	98.7%	73.0	74	75	98.7%
Longfellow	21.4	42	49	85.7%	28.6	35	40	87.5%
Lovejoy	64.9	37	53	69.8%	68.3	41	57	71.9%
Lucas	25.0	48	57	84.2%	31.1	45	58	77.6%
Madison	47.1	34	43	79.1%	38.2	34	48	70.8%
Mann	NA	0	42	NA	55.9	34	36	94.4%
Mc Kee	51.9	54	63	85.7%	42.0	50	56	89.3%
Mc Kinley	17.8	45	49	91.8%	30.2	43	51	84.3%
Mitchell	54.8	42	42	100.0%	53.5	43	50	86.0%
Monroe	80.0	85	95	89.5%	65.8	79	91	86.8%
Moore	67.8	59	75	78.7%	72.5	51	66	77.3%
Moulton	23.1	39	58	67.2%	24.4	45	69	65.2%
Oak Park	44.8	67	70	95.7%	42.6	54	59	91.5%
Park Avenue	60.7	89	106	84.0%	64.2	81	104	77.9%
Perkins	54.0	113	116	97.4%	51.0	100	110	90.9%
Phillips	60.0	50	54	92.6%	67.9	53	53	100.0%
Pleasant Hill	73.2	41	44	93.2%	69.4	36	43	83.7%
Stowe	40.7	54	65	83.1%	46.7	45	59	76.3%
Studebaker	56.9	72	81	88.9%	51.5	66	68	97.1%
Wallace	33.3	45	55	81.8%	21.7	46	57	80.7%
Watrous	47.5	40	47	85.1%	39.1	46	55	83.6%
Willard	30.5	59	70	84.3%	28.3	53	68	77.9%
Windsor	66.2	65	72	90.3%	72.4	58	67	86.6%
Woodlawn	61.8	68	93	73.1%	69.4	72	77	93.5%
Wright	53.5	43	51	84.3%	60.4	48	55	87.3%
DISTRICT	55.4	2155	2536	85.0%	55.3	2107	2466	85.4%

NOTES: Number & Percent Complete refers to the number and percent of students completing the test to get a Core Total score. Low percentages may result from building totals that include special populations who are not tested, in addition to students who are absent for one or more of the subtests.

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Appendix G

Percent of Students Scoring on Grade Level (50th Percentile) or Higher
Grade 6 (1993-94) to Grade 7 (1994-95) ITBS Middle School Trends

School	Grade 6 1993-94 Percent ≥ Grade Level	Grade 6 1993-94 Number Complete	Grade 6 1993-94 Number Enrolled	Grade 6 1993-94 Percent Complete	Grade 7 1994-95 Percent ≥ Grade Level	Grade 7 1994-95 Number Complete	Grade 7 1994-95 Number Enrolled	Grade 7 1994-95 Percent Complete
Brody	57.7	220	244	90.2%	61.8	225	247	91.1%
Callanan	67.2	232	279	83.2%	66.2	216	259	83.4%
Goodrell	52.3	197	228	86.4%	54.6	185	214	86.4%
Harding	44.4	205	283	72.4%	50.3	181	273	66.3%
Hiatt	49.3	148	196	75.5%	41.7	144	186	77.4%
Hoyt	44.7	170	211	80.6%	45.3	139	171	81.3%
Mc Combs	49.7	169	189	89.4%	58.3	151	182	83.0%
Meredith	54.2	236	257	91.8%	51.7	240	264	90.9%
Merrill	63.1	168	191	88.0%	65.6	157	180	87.2%
Weeks	63.8	174	226	77.0%	59.5	173	230	75.2%
DISTRICT	55.0	1919	2304	83.3%	56.0	1811	2206	82.1%

NOTES: Number & Percent Complete refers to the number and percent of students completing the test to get a Core Total score. Low percentages may result from building totals that include special populations who are not tested, in addition to students who are absent for one or more of the subtests.

Supplement

Critical to an accurate interpretation of standardized test scores is an understanding of the types of norms used, their derivation, and how they should be interpreted. Therefore, the following information is provided to assist the reader in reaching appropriate conclusions.

School norms are used to compare schools or districts within a reference group. Des Moines uses the national reference group (i.e., national norms). The school norm distribution, or curve, is derived from the pool of school average scores (see Figure 1). In other words, each school contributes one score, the school's average, to the pool of scores. This results in a curve that has less variability (a narrower range) and is more peaked when compared to a normal distribution. Because of the narrower range, the difference of a few raw score points translates into large differences in percentile rank. The farther scores are from the mean (50th percentile), the more school achievement may look inflated or deflated. Also, when examining trends, school norms tend to yield greater fluctuations over time.

Student norms are used to examine the achievement of the average student in a class, grade, school, or district, with respect to a reference group. The student norm distribution is derived from the pool of student scores, such that each student's score is included in the pool of scores from which the normal curve is derived. This results in the classic "bell-shaped" curve. When examining trends, student norms tend to be more stable than school norms. Interpreted at a school level, the student norm reflects the achievement of the average student in the school and grade, an interpretation that is not able to be made with school norms. When a parent receives test results from the Iowa Testing Programs, and wants to compare a student's achievement with that of other students in the school, the appropriate norm to use is the student norm.

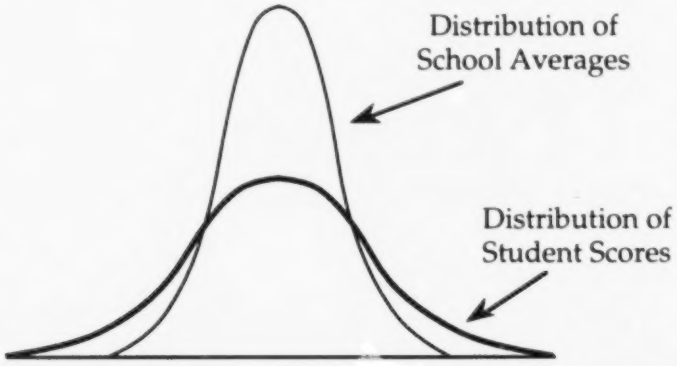

Figure 1. Comparison of School and Student Norm Distributions

Traditionally, school norms have been used in reporting to the public. However, many readers interpret school norms as the achievement of the average student at a school, which is inaccurate. When ITBS data are disaggregated for district or school improvement purposes, such as including results in school information bases, student norm data are used.

Tables S1 through S7 are tables that were presented earlier in this document, with the scores based on student norms instead of school norms. As can be seen in Tables S6 and S7, the fluctuations in scores over time are less than those found in Appendices D and E. Essentially, these tables show that *students* in lower achieving schools are not doing as poorly as their *school* norms reflect, and that *students* in higher achieving schools are not doing as well as their *school* norms reflect. Both norms are valid. It is the nature of the desired interpretation that dictates the appropriate norm that should be used.

Table S1. Elementary School ITBS Subtest Score Comparisons:
Cohort Trend Percentile Ranks
National Student Norms

	Grade 3 1993-94	Grade 4 1994-95
Vocabulary	54	48
Reading Comprehension	54	58
Reading Total	53	55
Spelling	48	52
Capitalization	59	67
Punctuation	63	64
Usage	62	60
Language Total	59	60
Math Concepts	61	53
Math Problem Solving	60	64
Math Total	61	60
Core Total	57	57
Maps & Diagrams	NA	65
Reference Materials	NA	57
Sources of Information Total	NA	60
Social Studies	NA	58

Table S2. Middle School ITBS Subtest Score Comparisons:
Cohort Trend Percentile Ranks
National Student Norms

	Grade 6 1993-94	Grade 7 1994-95
Vocabulary	51	50
Reading Comprehension	55	54
Reading Total	54	53
Spelling	54	57
Capitalization	58	60
Punctuation	56	58
Usage	56	56
Language Total	56	58
Math Concepts	60	56
Math Problem Solving	59	57
Math Total	59	57
Core Total	56	57
Maps & Diagrams	NA	62
Reference Materials	NA	55
Sources of Information Total	NA	59

Table S3. ITED Mean Percentile Scores by Subtest
National Student Norms

Subtest	Average Percentile Score	
	1993-94	1994-95
Vocabulary	67	67
Content area Reading	65	75
Reading Total	67	70
Expression	65	68
Quantitative Thinking	69	72
Core Total	69	73
Literary Materials	66	66
Social Studies	71	71
Science	72	75
Sources of Information	70	69
Composite	71	72

Table S4. ITBS Historical Results
Grade 3 & Grade 4 Percentile Ranks
National Student Norms

SCHOOL	Grade 3 1993-94 Core Total	Grade 3 1994-95 Core Total	Grade 4 1993-94 Core Total	Grade 4 1994-95 Core Total
Adams	60	49	50	52
Brooks	29	27	46	29
Cattell	61	54	54	54
Douglas	58	60	62	60
Edmunds	37	50	39	42
Findley	62	53	67	62
Garton	45	50	51	42
Granger	65	65	61	59
Greenwood	83	78	80	82
Hanawalt	86	86	84	88
Hillis	64	70	68	62
Howe	44	64	62	53
Hubbell	70	67	67	76
Jackson	58	51	64	63
Jefferson	75	84	83	76
Longfellow	27	33	40	36
Lovejoy	60	57	53	61
Lucas	31	23	33	35
Madison	49	57	61	44
Mann	NA	45	54	52
Mc Kee	46	31	47	42
Mc Kinley	25	33	35	36
Mitchell	52	46	57	52
Monroe	78	69	70	68
Moore	71	62	69	67
Moulton	28	36	47	32
Oak Park	50	55	50	43
Park Avenue	57	55	51	58
Perkins	60	64	62	58
Phillips	61	65	50	65
Pleasant Hill	69	70	66	64
Stowe	52	50	55	55
Studebaker	61	60	61	55
Wallace	36	31	46	31
Watrous	48	75	60	42
Willard	46	31	45	39
Windsor	66	60	74	69
Woodlawn	57	62	63	66
Wright	56	46	58	59
DISTRICT	57	57	60	57

Table S5. ITBS Historical Results
Grade 6 & Grade 7 Percentile Ranks
National Student Norms

SCHOOL	Grade 6 1993-94 Core Total	Grade 6 1994-95 Core Total	Grade 7 1993-94 Core Total	Grade 7 1994-95 Core Total
Brody	61	59	61	60
Callanan	67	66	65	66
Goodrell	52	53	50	53
Harding	46	40	47	49
Hiatt	51	41	46	46
Hoyt	48	44	53	49
McCombs	53	52	57	57
Meredith	56	54	62	56
Merrill	65	63	68	65
Weeks	61	51	63	60
DISTRICT	56	53	58	57

Table S6. ITBS Percentile Rank Trends
Grade 3 (1993-94) To Grade 4 (1994-95)
National Student Norms

SCHOOL	Grade 3 1993-94 Core Total	Grade 3 1993-94 % Mobility Group*	Grade 3 1993-94 % Fr/Red Group*	Grade 4 1994-95 Core Total	Grade 4 1994-95 % Mobility Group*	Grade 4 1994-95 % Fr/Red Group*	1993-94 to 1994-95 Core Total Change
Adams	60	1	3	52	1	3	-8
Brooks	29	2	7	29	1	6	0
Cattell	61	1	5	54	1	4	-7
Douglas	58	1	3	60	0	3	+2
Edmunds	37	0	5	42	1	5	+5
Findley	62	1	7	62	0	6	0
Garton	45	3	6	42	1	5	-3
Granger	65	0	4	59	1	4	-6
Greenwood	83	0	1	82	0	2	-1
Hanawalt	86	0	1	88	0	1	+2
Hillis	64	0	3	62	0	3	-2
Howe	44	0	4	53	0	3	+9
Hubbell	70	1	2	76	0	2	+6
Jackson	58	0	4	63	1	4	+5
Jefferson	75	0	1	76	0	0	+1
Longfellow	27	3	9	36	2	8	+9
Lovejoy	60	2	4	61	2	5	+1
Lucas	31	1	8	35	1	7	+4
Madison	49	1	4	44	1	5	-5
Mann	NA	1	5	52	0	3	NA
Mc Kee	46	0	4	42	1	4	-4
Mc Kinley	25	1	7	36	1	6	+11
Mitchell	52	1	3	52	0	4	0
Monroe	78	1	3	68	1	3	-10
Moore	71	1	3	67	0	4	-4
Moulton	28	4	9	32	2	9	+4
Oak Park	50	1	5	43	0	5	-7
Park Avenue	57	1	4	58	0	4	+1
Perkins	60	1	5	58	1	4	-2
Phillips	61	1	3	65	0	4	+4
Pleasant Hill	69	1	1	64	1	2	-5
Stowe	52	1	7	55	3	7	+3
Studebaker	61	1	2	55	0	2	-6
Wallace	36	1	6	31	2	7	-5
Watrous	48	2	3	42	2	3	-6
Willard	46	1	5	39	3	5	-7
Windsor	66	1	2	69	0	3	+3
Woodlawn	57	0	2	66	1	2	+9
Wright	56	1	3	59	1	3	+3
DISTRICT	57	14.08	45.31	57	13.06	44.81	0

*Group numbers represent ranges of student percentages (i.e., 0 is less than or equal to 9.99%, 1 is 10% to 19.99, etc., 9 is greater than 90%).

Table S7. ITBS Percentile Rank Trends
Grade 6 (1993-94) To Grade 7 (1994-95)
National Student Norms

SCHOOL	Grade 6 1993-94 Core Total	Grade 6 1993-94 % Mobility Group*	Grade 6 1993-94 % Fr/Red Group*	Grade 7 1994-95 Core Total	Grade 7 1994-95 % Mobility Group*	Grade 7 1994-95 % Fr/Red Group*	1993-94 to 1994-95 Core Total Change
Brody	61	0	2	60	0	2	-1
Callanan	67	0	3	66	1	3	-1
Goodrell	52	1	4	53	1	4	+1
Harding	46	1	5	49	2	5	+3
Hiatt	51	1	6	46	2	5	-5
Hoyt	48	1	4	49	1	4	+1
McCombs	53	1	3	57	0	3	+4
Meredith	56	0	3	56	0	3	0
Merrill	65	0	3	65	1	2	0
Weeks	61	1	4	60	1	4	-1
DISTRICT	56	11.98	41.28	57	13.24	39.30	+1

*Group numbers represent ranges of student percentages (i.e., 0 is less than or equal to 9.99%, 1 is 10% to 19.99, etc., 9 is greater than 90%).